

Public Water Supply Regulatory Update

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Our Mission: To protect and improve the health and environment of all Kansans.

TOPICS

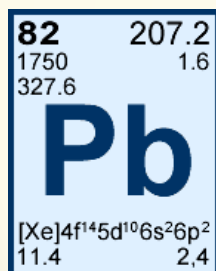
- Lead and Copper Rule (LCR)
- Revised Total Coliform Rule (RTCR)



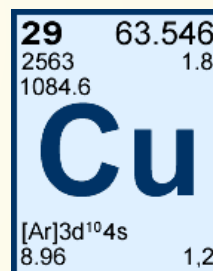
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Lead and Copper Rule Overview

- L/C Rule promulgated June 7, 1991
- Revised 2000
- Corrected 2004
- Short Term Revision 2007



AND



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Lead and Copper Rule Objectives

Four Basic Objectives

- Identify High Risk Homes – Measure Levels
- Determine Source Water Contribution
- Public Education When Lead Action Levels Exceeded
- Require Corrosion Control

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Lead Health Effects in Adults

Pregnant Women

- Miscarriage
- Reduced growth of the fetus and/or premature birth

Lead in Adults

- Nervous system effects
- Cardiovascular effects
- Compromised kidney function
- Reproductive problems



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Lead Health Effects in Children

- Permanent Brain and Nervous System Damage
 - Behavior & Learning Challenges
 - Lower IQ
 - Hearing Problems
- Slowed Growth
- Anemia
- Ingestion (Rare Cases)
 - Seizures
 - Coma
 - Death



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Copper Health Effects

Sensitive Individuals May Experience

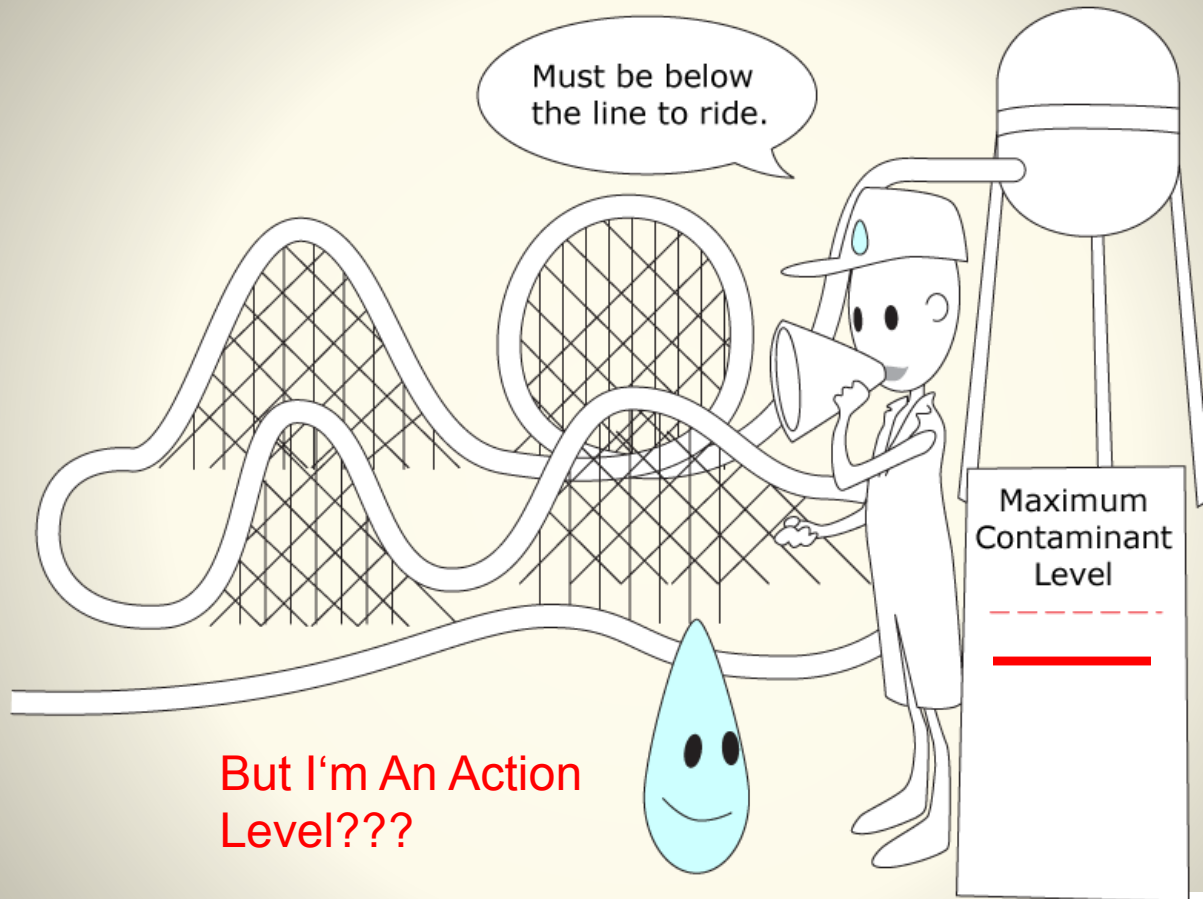
- Stomach and/or Gastrointestinal distress
- Liver and/or kidney damage
- Wilson's Disease Complications



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Hmmm????



But I'm An Action
Level???

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What is an Action Level?

40 CFR 141.2 Definitions

Action level is defined as “the concentration of lead or copper in water specified in 141.80(c) which determines, in some cases, the treatment requirements contained in subpart 1 of this part that a water system is required to complete.”

Lead = 15 ug/L and Copper = 1300 ug/L

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Exceeding the AL at the 90th %

- If Lead Exceedance, Provide Lead Public Education(60 days)
- Standard Monitoring (Every 6 months)
- Submit Source Water Samples Within 6 Months
- Submit Water Quality Parameter Samples Within 6 Months

If System Exceeds During Standard Monitoring

- Corrosion Control Treatment Recommendation via P.E.
- Installation of Corrosion Control – Requires Plans and Specs
- Corrosion Control In Place
 - Lead Service Line Replacements 7% Annually

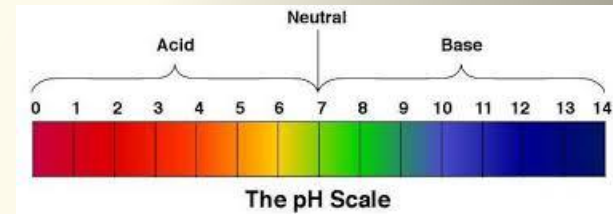
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Corrosion Control

Three Basic Approaches

- Modify Water Quality – Less Corrosive to Pipe Materials
- Protective Barrier or Lining Between Water and Pipe
- Distribution System Materials (Plastic Pipe)



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Materials Evaluation

- Survey all materials within distribution system in an effort to identify vulnerable locations.
- Vulnerable locations part of New Sample Site Plan (TIER 1)
- How do we access this information? Examples include:
 - 1) Plumbing Codes
 - 2) Plumbing Permits
 - 3) Inspection and maintenance records
 - 4) Existing Water Quality Data
 - 5) Community Survey
 - 6) Interviews with building inspectors, senior personnel, etc.

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L/C Rule After Flint



- Six (6) vs. Five (5) samples
Then $6 \times .9 = 5.4$ and Now $5 \times .9 = 4.5$
 - Materials Evaluation
Submission by June 1, 2017
 - Sample Site Plan
Most Vulnerable Sites, Need Map
- Sampling
No Pre-stagnation Flushing, Invalidation, Bottles
 - Consumer Notification
Provide all participating customers with L/C sample results within 30 days and within 3 months following end of monitoring period provide Certificate of Delivery.

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Monitoring Requirements

Required Number of Samples Based on Population Served

Population Served	Standard Monitoring	Reduced Monitoring
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

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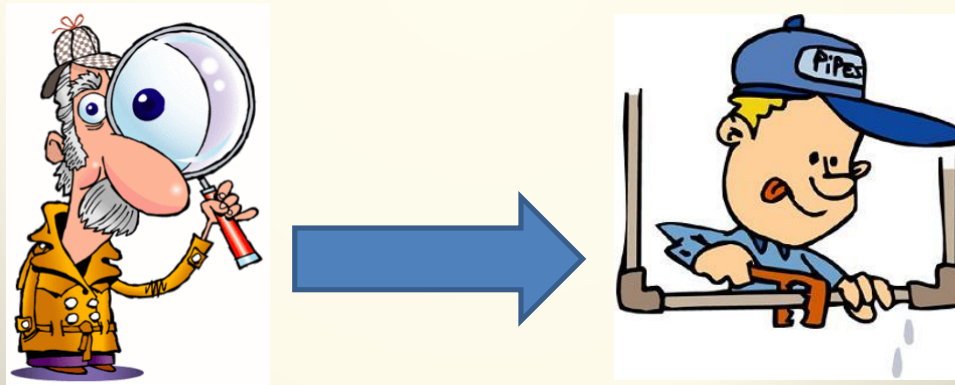


Revised Total Coliform Rule

Objectives

- Evaluate effectiveness of treatment
- Determine integrity of distribution system
- Signal possible presence of microbial contamination

“Find and Fix Approach”



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RTCR Violation Types

- Monitoring
- Reporting
- Treatment Technique
- E. coli MCL



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Monitoring & Reporting

- PWS Fails to Collect all Required Routine or Repeat Samples
- PWS Fails to Test for E. coli Following a Routine TC+ Sample



- PWS Fails to Report Sample Results

Public Notification Requirements

- Tier 3 – Notify Public Within 365 Days



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Treatment Technique

- PWS Fails to Conduct Required Level 1 Assessment
- PWS Fails to Correct Sanitary Defect
 - Level 1 or Level 2 Assessment

Public Notification Requirements

- Tier 2 – Notify Public Within 30 Days



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E. coli MCL

E. coli MCL Violation Occurs With the Following Combinations

If a routine sample is	And	a repeat sample is
TC+		EC+
EC+		TC+
EC+		EC+
EC+		missing (any repeat sample)
TC+		TC+ result, but no <i>E. coli</i> analysis

Public Notification Requirements

- Tier 1 – Notify Public Within 24 Hours


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Assessments

- Monitoring Results Trigger Assessments
 - Identify “Sanitary Defects”
 - Correct Identified Defects
- Level 1 – Completed by PWS
 - PWS Data Collector
- Level 2 – Completed by KDHE



**Water**

[Public Water Supply Data Collector \(PWSDC\)](#)

[Drinking Water Watch \(DWW\)](#)

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Level 1 Assessments

Includes All Compliance Samples (Routine & Repeat) to determine trigger



**Within 1
month or
state
assigned**

≥ 40 Samples \longrightarrow $> 5.0\%$ TC+

**< 40 Samples \longrightarrow ≥ 2 or more
TC+**

**Level 1
assessment**

**Failure to take every
required repeat
sample after any TC+**

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Level 2 Assessments

- Level 2 assessments required if:
 - E. Coli MCL violation
 - 2nd Level 1 Assessment within rolling 12 month period



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Assessment Requirements

- Minimum Requirements : 40 CFR 141.859(b)(2)
 - Sample Site Plan, Protocol, Processing
 - Atypical Events That May Affect Water Quality
 - Changes In Distribution System O & M (Including Storage)
 - Source and Treatment Considerations
 - Existing Water Quality Monitoring Data



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Sanitary Defects

- What is a Sanitary Defect?

“....defects that could either provide pathways that allow fecal contamination and/or waterborne pathogens to enter into the distribution system, or could indicate a failure or imminent failure in a barrier that is already in place.....”

- Sanitary defects designation are state discretion.
- Can overlap with definition of Significant Deficiencies

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Corrective Actions

- Sanitary Defects are identified during either a Level 1 or 2 assessment.
- Ideally, sanitary defects will be corrected within 30 days of completed assessment.
- If not completed within 30 days system must correct sanitary defect according to schedule determined by the state.
- Violation assessed only if defects are not fixed within 30 days or defined timeframe by state.

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Sanitary Defects Find And Fix

Replaced Old Well Cap With New Sanitary Cap, Replace Conduit Installed A Frost Sleeve.



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Sanitary Defects Find And Fix



Well with plug-style opening and unsealed seams, cleared the vegetation; new concrete risers; seams sealed with hydraulic cement; waterproof, locking, overlapping cover.

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Sanitary Defects Find And Fix



Storage tank with pump penetrations sealed with rag vs permanently sealed penetrations.

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Sanitary Defects Find And Fix



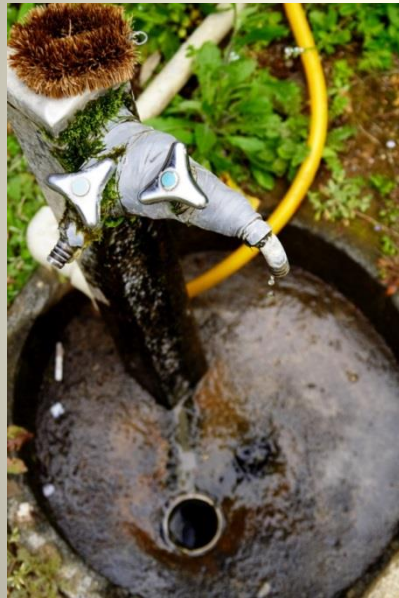
Cracked well conduit; cover lifted off casing due to frost heaving; rusted split cap vs Secure conduit, secure sanitary cap.

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Sample Location

- Dripping leaky faucet with Duct tape and moss
- Mixing tub faucet, lots of internal parts, not representative
- Swivel Faucet



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Review Sampling Protocol



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Contacts and Information

Forms, Plans, Regulations, Etc.
Public Water Supply Section Website
<http://www.kdheks.gov/pws/index.html>

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Questions



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